参考資料

COSEL

TEST DATA OF DBS400B18

(280V INPUT)

Regulated DC Power Supply

Apr. 12, 2000

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COSEL CO., LTD.

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CONTENTS

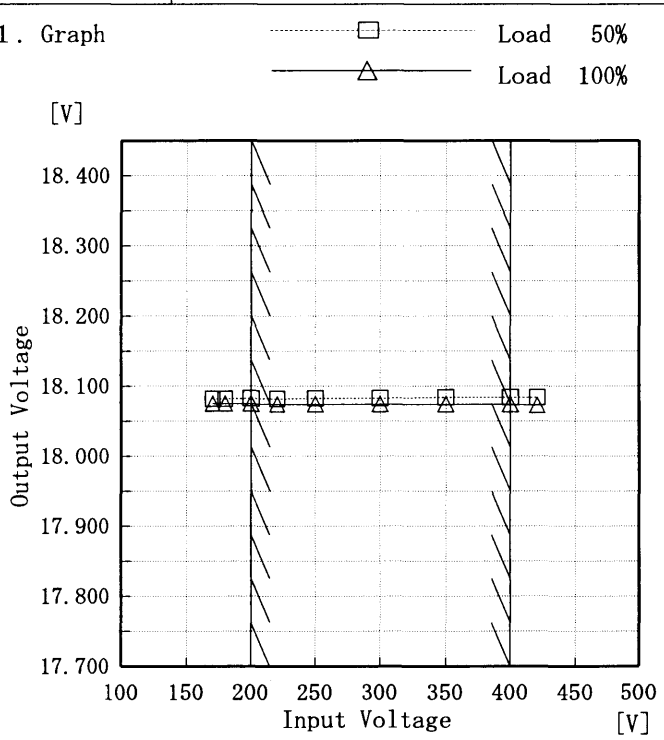
(Final Page 22)

COSEL

Model	DBS400B18
Item	Line Regulation 静的入力変動
Object	+18.0V22A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
170	18.082	18.075
180	18.082	18.075
200	18.083	18.075
220	18.082	18.074
250	18.083	18.074
300	18.083	18.074
350	18.084	18.074
400	18.084	18.074
420	18.084	18.073

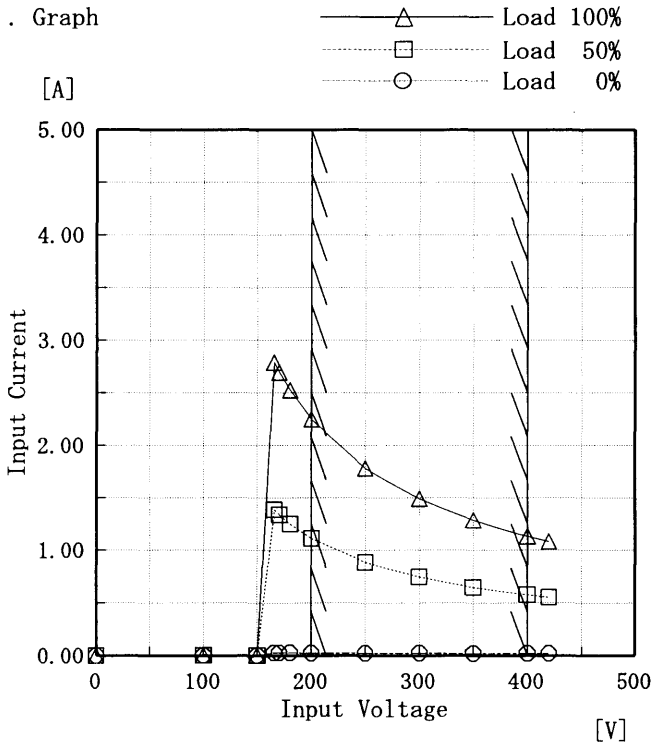
BC−3283

COSEL

Model	DBS400B18
Item	Input Current (by Input Voltage) 入力電流（入力電圧特性）
Object	————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
50	0.000	0.000	0.000
100	0.002	0.002	0.002
150	0.003	0.003	0.003
165	0.026	1.388	2.787
170	0.025	1.338	2.694
180	0.025	1.252	2.523
200	0.024	1.114	2.247
250	0.022	0.886	1.782
300	0.021	0.747	1.491
350	0.021	0.648	1.286
400	0.021	0.576	1.134
420	0.020	0.552	1.083
—	—	—	—
—	—	—	—
—	—	—	—

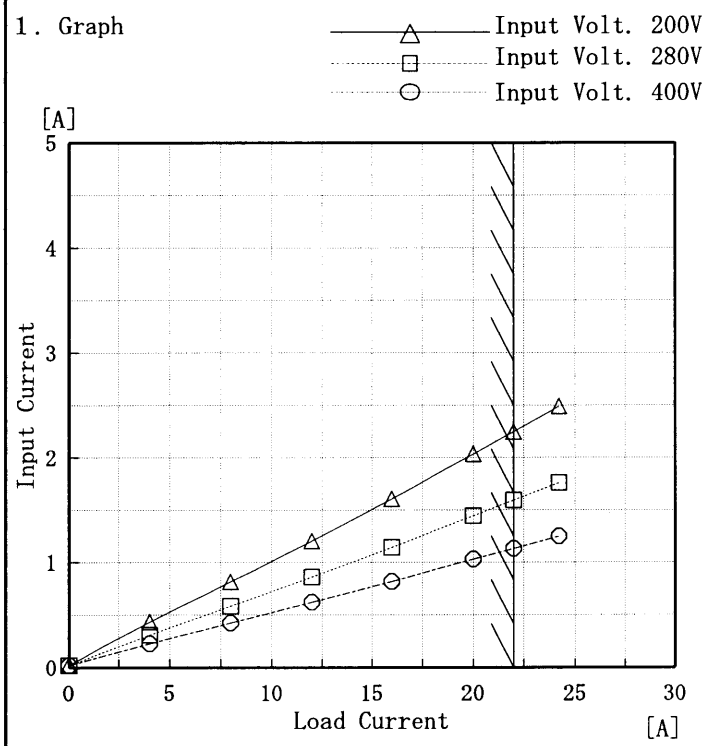
BC－3283

COSEL

Model	DBS400B18
Item	Input Current (by Load Current) 入力電流（負荷特性）
Object	————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load current.

(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	0.024	0.022	0.021
4.0	0.434	0.309	0.226
8.0	0.817	0.584	0.426
12.0	1.206	0.862	0.621
16.0	1.607	1.145	0.820
20.0	2.034	1.446	1.030
22.0	2.248	1.595	1.134
24.2	2.489	1.761	1.249
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

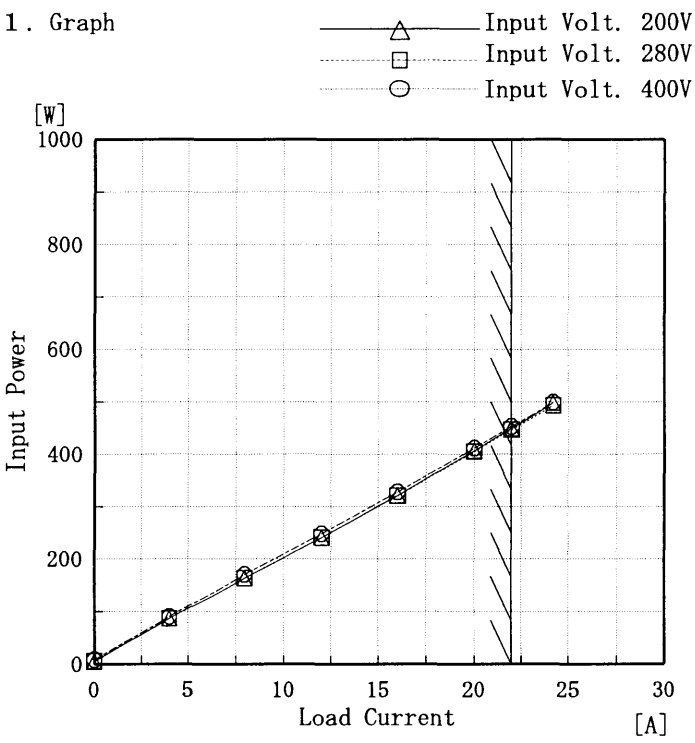
BC－3283

COSEL

Model	DBS400B18
Item	Input Power (by Load Current) 入力電力 (負荷特性)
Object	————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load current.

(注)斜線は定格負荷電流範囲を示す。

2. Values

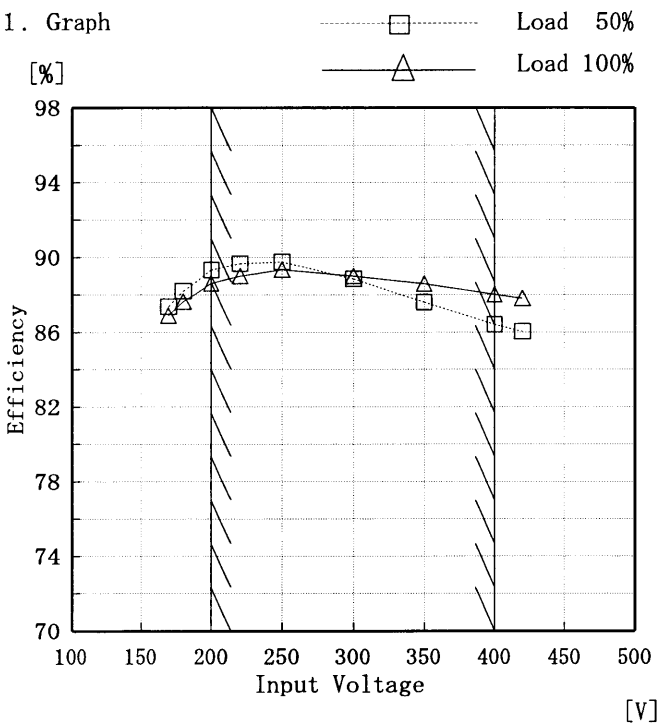
Load Current [A]	Input Power [W]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	4.80	6.00	8.30
4.0	86.80	86.60	90.30
8.0	163.40	163.50	170.30
12.0	241.20	241.40	248.30
16.0	321.40	320.80	328.00
20.0	407.00	404.80	412.00
22.0	449.00	446.70	453.00
24.2	498.00	493.10	499.00
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	DBS400B18
Item	Efficiency (by Input Voltage) 効率（入力電圧特性）
Object	

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

2. Values

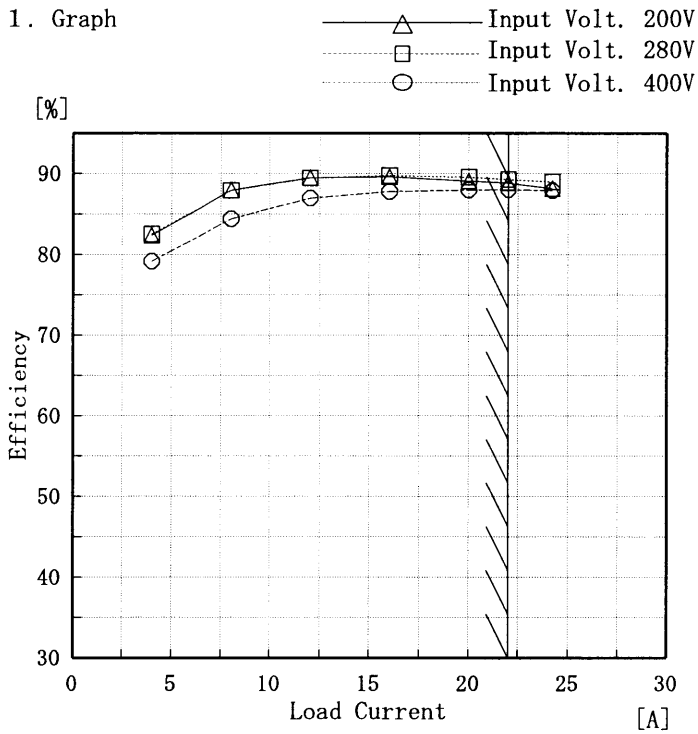
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
170	87.4	86.9
180	88.2	87.6
200	89.3	88.6
220	89.7	89.0
250	89.8	89.3
300	88.9	89.0
350	87.6	88.6
400	86.4	88.0
420	86.0	87.8

COSEL

Model	DBS400B18
Item	Efficiency (by Load Current) 効率 (負荷特性)
Object	————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load current.

(注)斜線は定格負荷電流範囲を示す。

2. Values

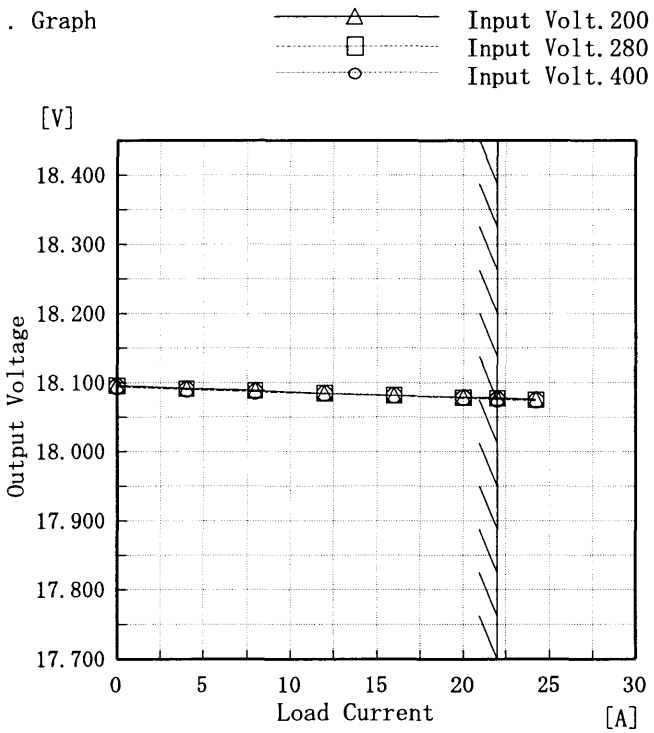
Load Current [A]	Efficiency [%]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
4.0	82.4	82.5	79.2
8.0	87.9	87.9	84.4
12.0	89.5	89.4	86.9
16.0	89.6	89.8	87.8
20.0	89.1	89.6	88.0
22.0	88.8	89.3	88.0
24.2	88.1	89.0	87.9
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	DBS400B18
Item	Load Regulation 静的負荷変動
Object	+18.0V22A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load current.

(注)斜線は定格負荷電流範囲を示す。

2. Values

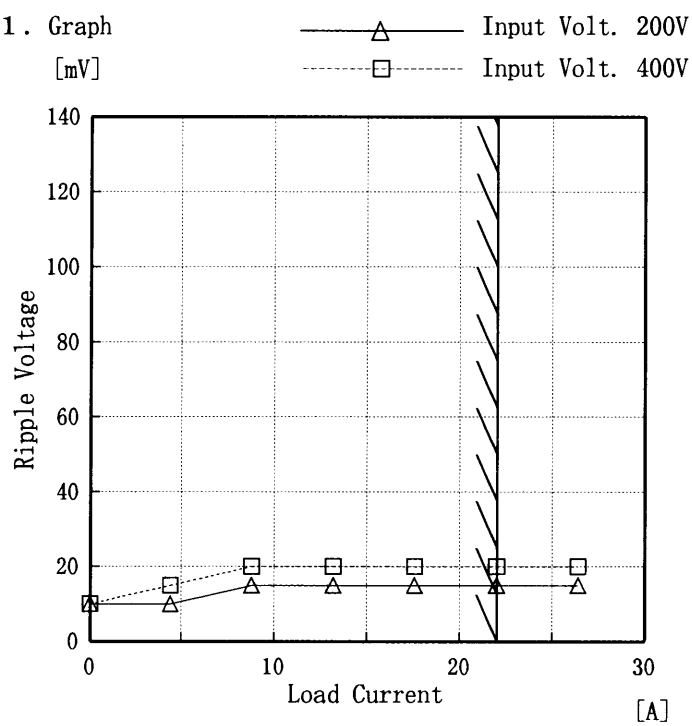
Load Current [A]	Output Voltage [V]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	18.096	18.095	18.094
4.0	18.092	18.091	18.090
8.0	18.089	18.088	18.087
12.0	18.084	18.085	18.084
16.0	18.081	18.082	18.081
20.0	18.079	18.078	18.078
22.0	18.078	18.077	18.076
24.2	18.076	18.075	18.074
—	—	—	—
—	—	—	—

COSEL

Model	DBS400B18
Item	Ripple Voltage(by Load Current) リップル電圧(負荷特性)
Object	+18V22A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Ripple Voltage is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

リップル電圧は、下図ｐ－ｐ値で示される。

(注)斜線は定格負荷電流範囲を示す。

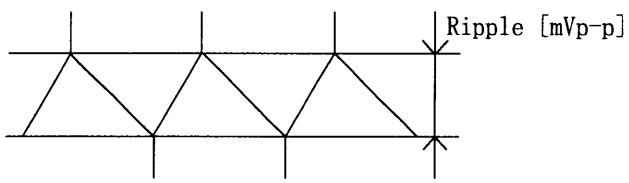


図　リップル波形図

2. Values

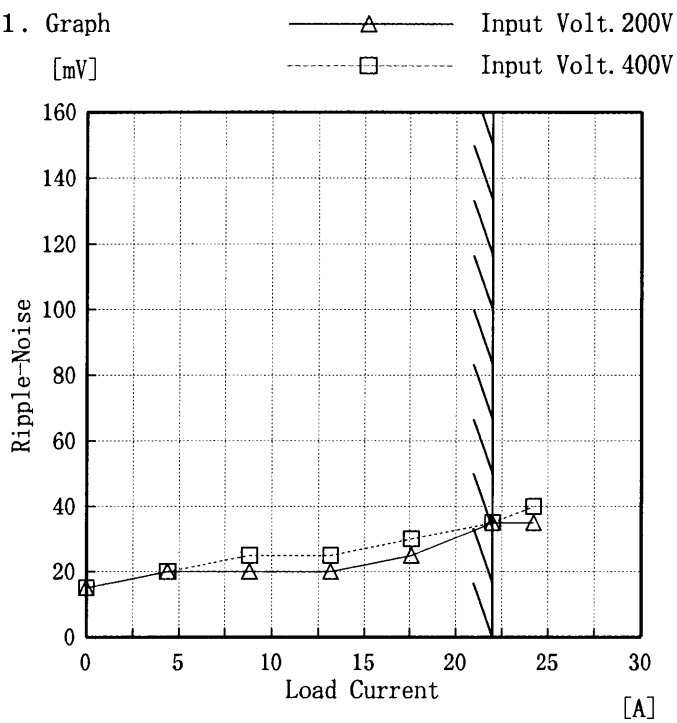
Load Current [A]	Ripple Output Volt. [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0	10	10
4	10	15
9	15	20
13	15	20
18	15	20
22	15	20
26	15	20
—	—	—
—	—	—
—	—	—
—	—	—

COSEL

Model	DBS400B18
Item	Ripple-Noise　リップルノイズ
Object	+18V22A

Temperature　25℃
Testing Circuitry　Figure A

1．Graph



Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

リップルノイズは、下図ｐ－ｐ値で示される。
(注)斜線は定格負荷電流範囲を示す。

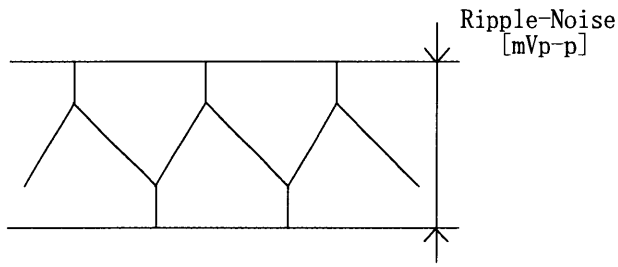


図　リップルノイズ波形図

2．Values

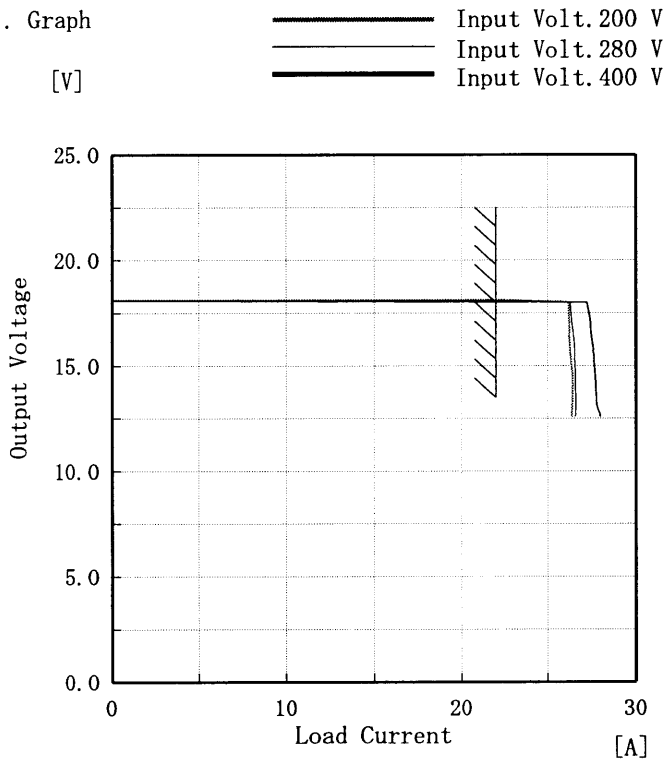
Load current [A]	Ripple-Noise [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0	15	15
4	20	20
9	20	25
13	20	25
18	25	30
22	35	35
24	35	40
—	—	—
—	—	—
—	—	—
—	—	—

COSEL

Model	DBS400B18
Item	Overcurrent Protection 過電流保護
Object	+18.0V22A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load current.
Intermittent operation occurs when the output voltage is from 13V to 0V.

(注)斜線は定格負荷電流範囲を示す。
13V～0V間は、間欠モードとなる。

2. Values

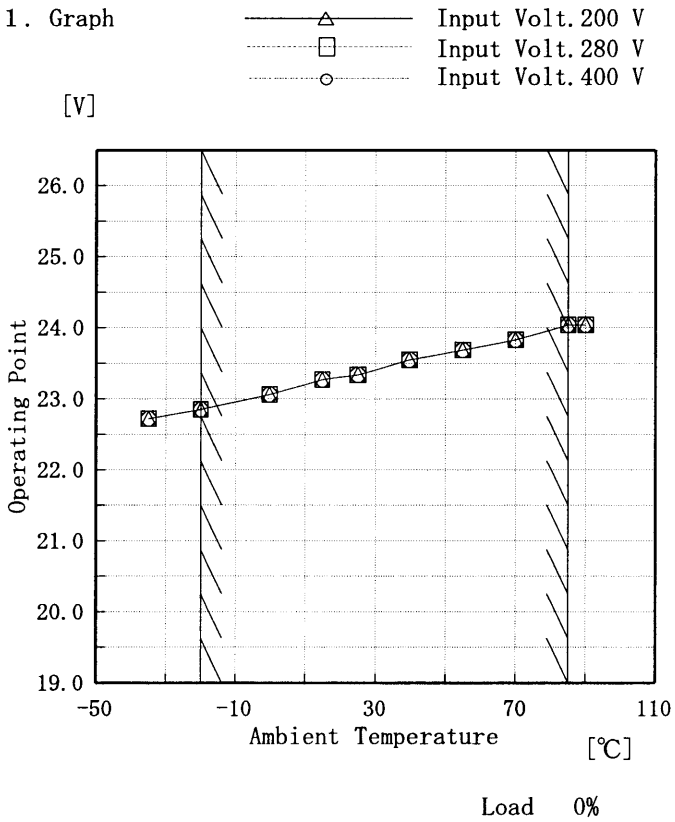
Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
18.00	26.17	26.27	27.16
17.10	26.20	26.35	27.34
16.20	26.23	26.47	27.46
14.40	26.40	26.53	27.64
12.60	26.36	26.50	27.94
10.80	—	—	—
9.00	—	—	—
7.20	—	—	—
5.40	—	—	—
3.60	—	—	—
1.80	—	—	—
0.00	—	—	—

COSEL

Model	DBS400B18
Item	Overvoltage Protection 過電圧保護
Object	+18.0V22A

Testing Circuitry Figure A

1. Graph



Load 0%

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temperature [℃]	Operating Point [V] Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-35	22.72	22.72	22.72
-20	22.85	22.85	22.85
0	23.06	23.06	23.06
15	23.27	23.27	23.27
25	23.34	23.34	23.34
40	23.55	23.55	23.55
55	23.69	23.69	23.69
70	23.83	23.83	23.83
85	24.04	24.04	24.04
90	24.04	24.04	24.04
—	—	—	—

COSEL

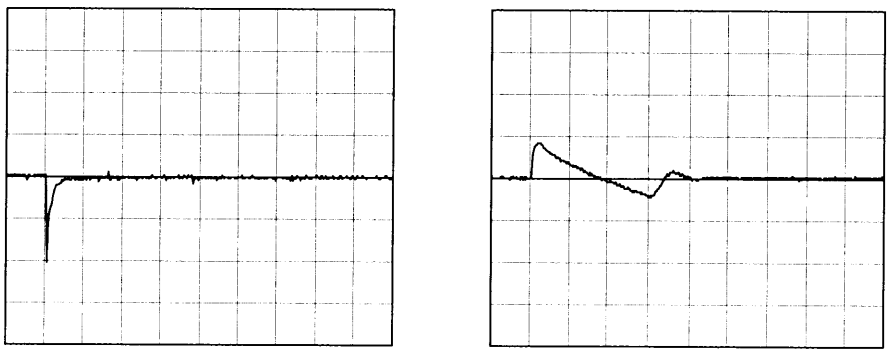
Model	DBS400B18		
Item	Dynamic Load Responce 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	+18V22A		

Input Volt. 280 V

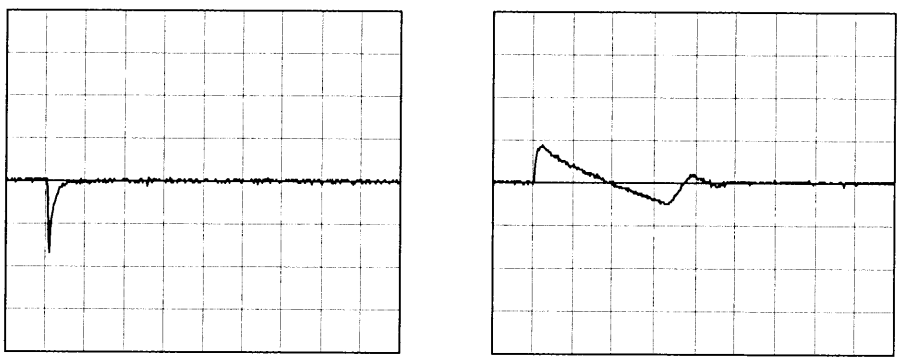
Cycle 1000 mS

Load Current

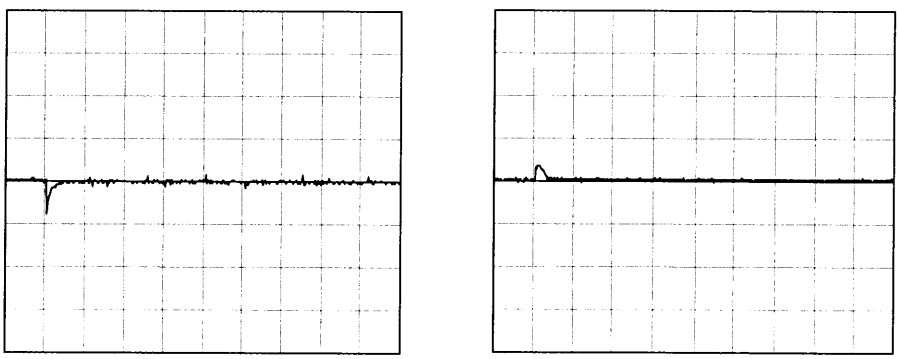
Min. Load (0.0A) ⟷
Load 100% (22.0A)



Min. Load (0.0A) ⟷
Load 50% (11.0A)



Load 10% (2.2A) ⟷
Load 100% (22.0A)

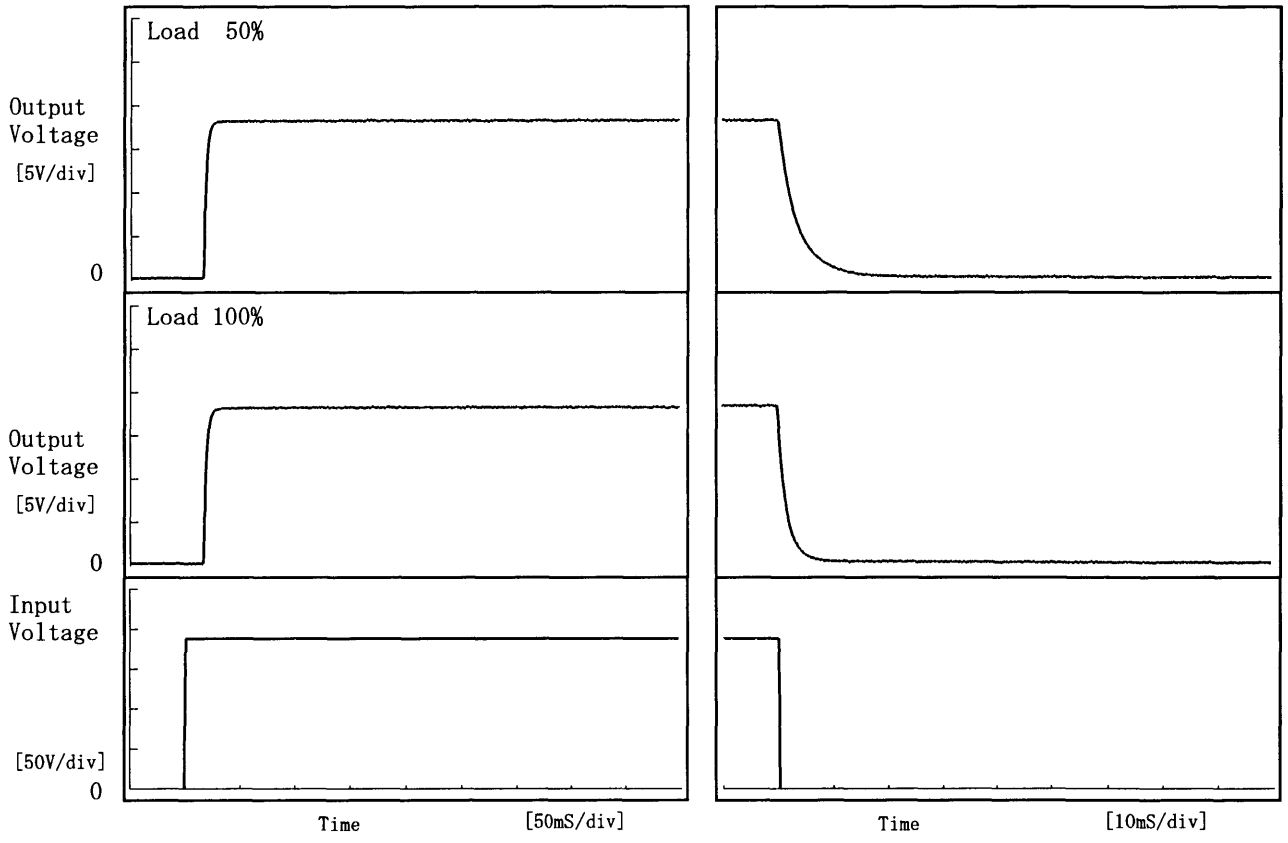


COSEL

Model	DBS400B18		
Item	Rise and Fall Time 立上り、立下り時間	Temperature Testing Circuitry	25℃ Figure A
Object	+18.0V22A		

1. Graph

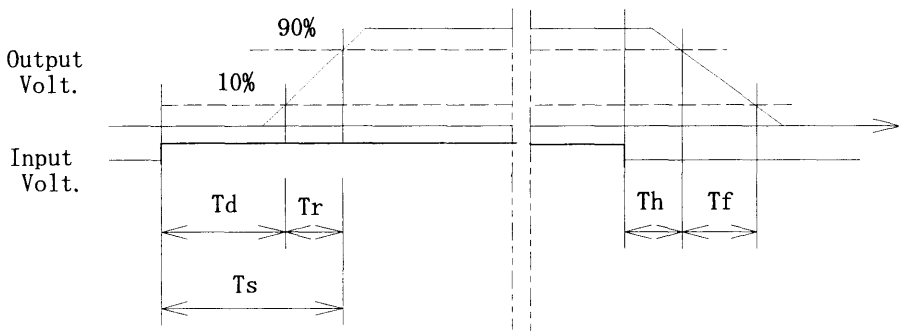
Input Volt. 200 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	16.25	5.25	21.50	0.40	8.30
100 %	17.25	5.00	22.25	0.15	4.10

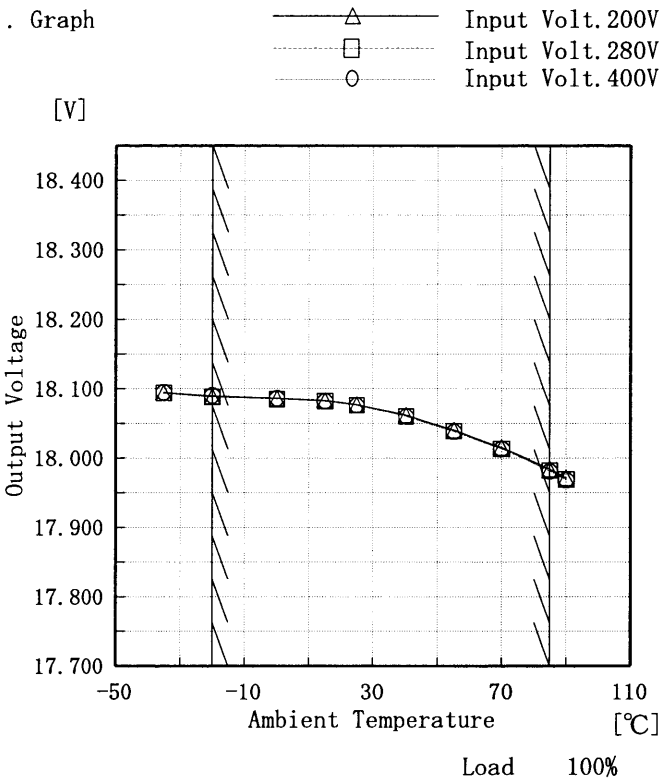


COSEL

Model	DBS400B18
Item	Ambient Temperature Drift 周囲温度変動
Object	+18.0V22A

Testing Circuitry Figure A

1. Graph



Load 100%

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

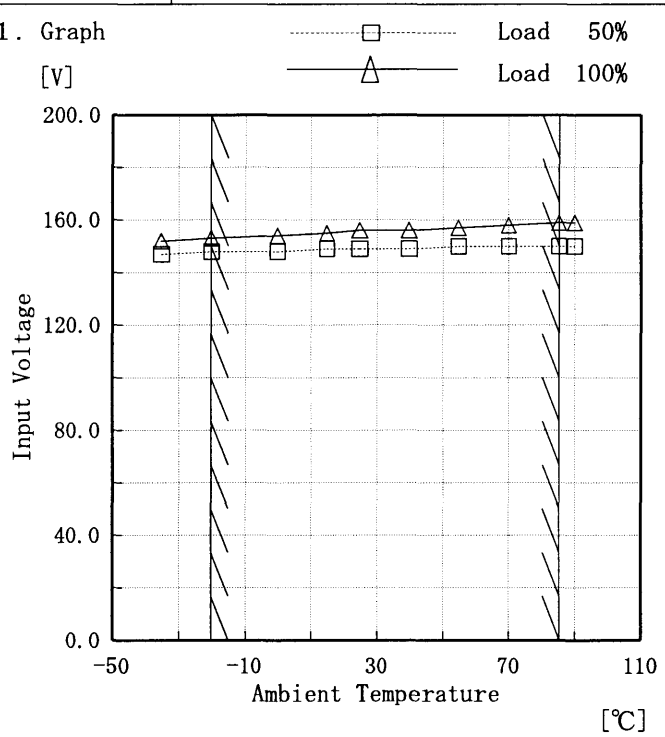
Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-35	18.094	18.094	18.095
-20	18.089	18.088	18.090
0	18.086	18.085	18.086
15	18.083	18.082	18.082
25	18.077	18.076	18.076
40	18.062	18.060	18.060
55	18.040	18.039	18.038
70	18.015	18.013	18.013
85	17.984	17.982	17.981
90	17.971	17.969	17.968
—	—	—	—

COSEL

Model	DBS400B18
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+18.0V22A

Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

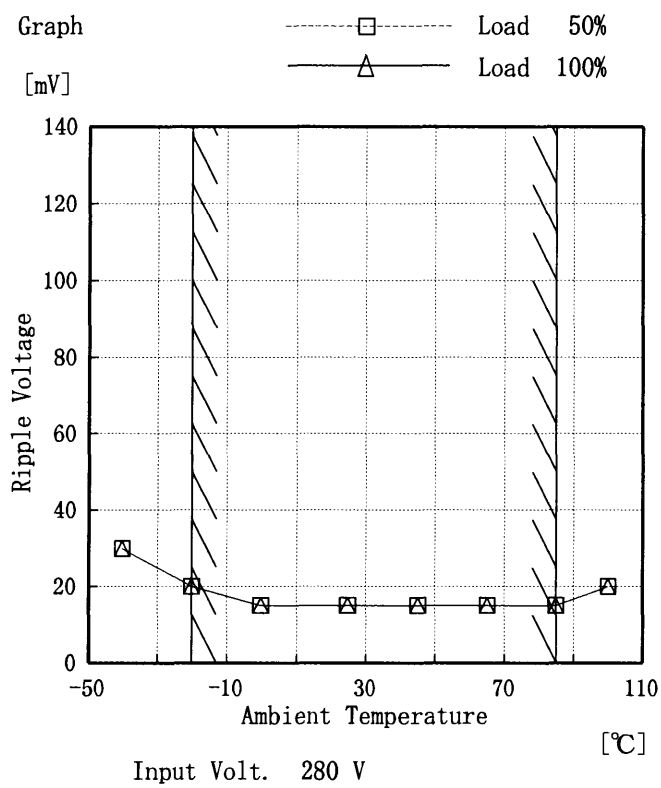
Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-35	147	152
-20	148	153
0	148	154
15	149	155
25	149	156
40	149	156
55	150	157
70	150	158
85	150	159
90	150	159
—	—	—

COSEL

Model	DBS400B18
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+18V22A

Testing Circuitry Figure A

1. Graph



Input Volt. 280 V

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

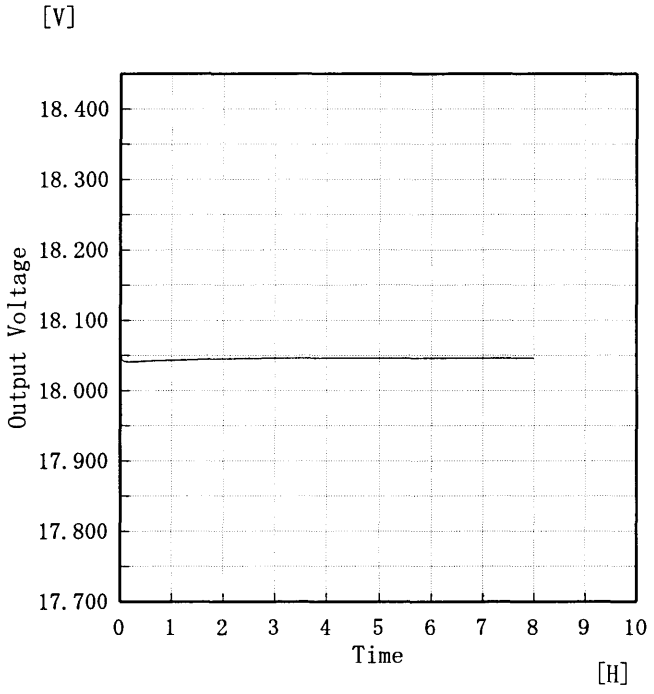
Ambient Temp. [℃]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	30	30
-20	20	20
0	15	15
25	15	15
45	15	15
65	15	15
85	15	15
100	20	20
—	—	—
—	—	—
—	—	—

COSEL

Model	DBS400B18
Item	Time Lapse Drift 経時ドリフト
Object	+18.0V22A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Input Volt. 280V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	18.064
0.5	18.042
1.0	18.043
2.0	18.045
3.0	18.046
4.0	18.046
5.0	18.046
6.0	18.046
7.0	18.046
8.0	18.046

COSEL

Model	DBS400B18	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	+18.0V22A	

1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -20～85 ℃
Input Voltage : 200～400 V
Load Current : 0～22 A

* Output Voltage Accuracy = ±(Maximum of Output Voltage − Minimum of Output Voltage)／2

$$* \text{Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 -20～85 ℃
入力電圧 200～400 V
負荷電流 0～22 A

* 定電圧精度(変動値) ＝ ±(出力電圧の最高値−出力電圧の最低値)／2

$$* \text{定電圧精度(変動率)} = \frac{\text{変動値}}{\text{定格出力電圧}} \times 100$$

2. Values

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ration) [%]
Maximum Voltage	-20	400	0	18.112	±69	±0.4
Minimum Voltage	85	400	22	17.976		

COSEL

Model	DBS400B18	
Item	Condensation 結露特性	Testing Circuitry Figure A
Object	+18V22A	

1. Condensation test

Testing procedure is as follows.

① Keeping and cooling the unit in a tank at -10℃ for an hour with the input off.

② Taking it out of the tank and dewing itself in a room where the temperature is 25℃ and the humidity is 40%RH.

③ Testing electrical characteristics of the unit to confirm there be no fault.

1．結露特性試験

入力を切った状態で、恒温槽で－１０℃に冷却しておき、約１時間後に恒温槽から取り出し、室温２５℃、湿度４０%RHの状態におき結露させ、その電気的特性の測定を行い、異常のないことを確認する。

2．Values

Item	Data	Testing Conditions
Output Voltage [V]	18.087	Input Volt.: 280V, Load Current:22A
Line Regulation [mV]	1	Input Volt.: 200～400V, Load Current:22A
Load Regulation [mV]	16	Input Volt.: 280V, Load Current:0～22A

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Model	DBS400B18		
Item	Line Noise Tolerance 入力雑音耐量	Temperature Testing Circuitry	25℃ Figure C
Object	+18V22A		

1. Results

Pulse Width [nS]	MODE	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation
1000	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation

Conditions

Input Voltage :200 V
Pulse Voltage :±2000 V
Pulse Cycle :10 mS
Pulse Input Duration:1 min. or more
Load :100 %

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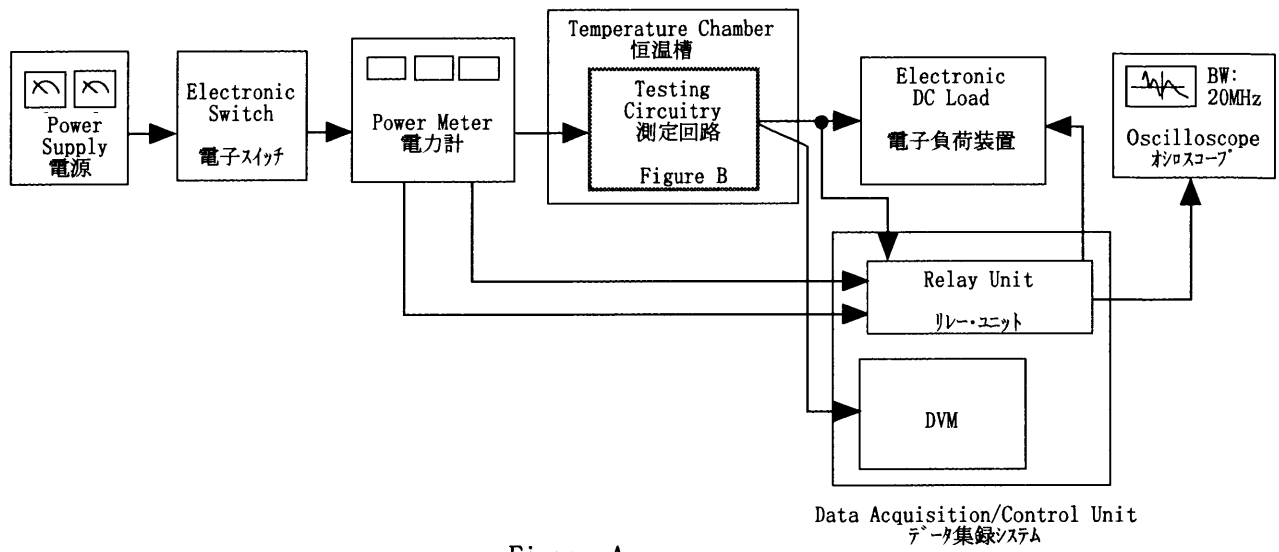

Figure A

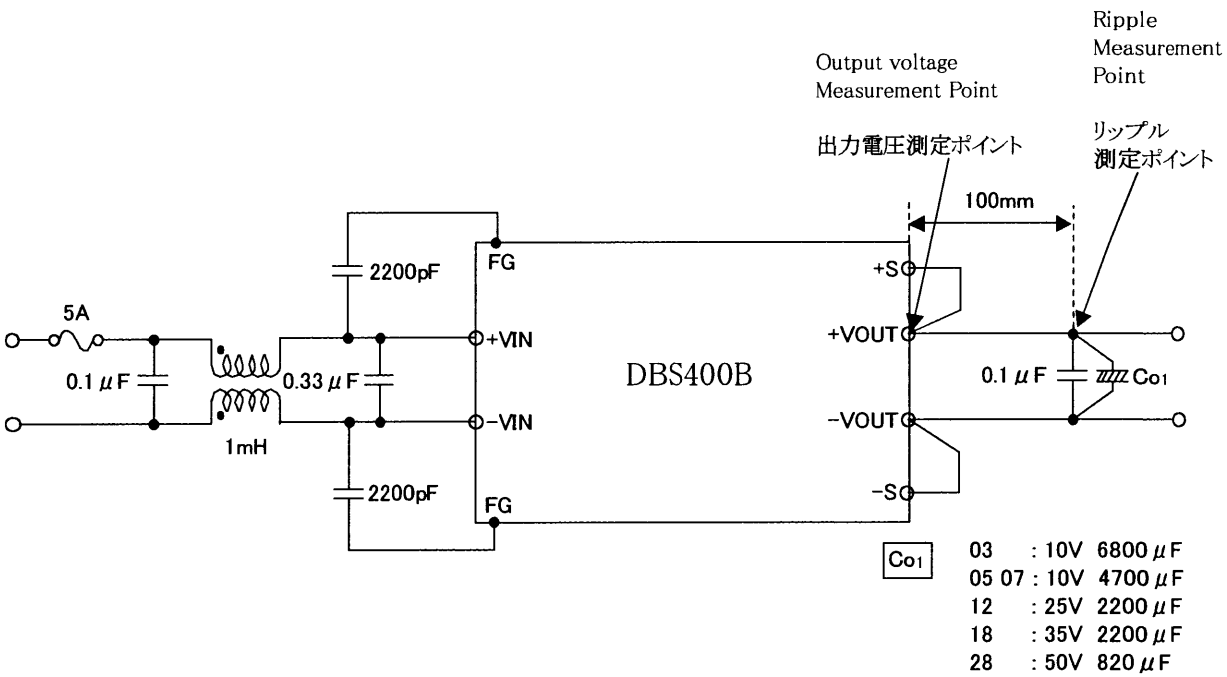

Figure B (General Electric Characteristic)
一般電気特性

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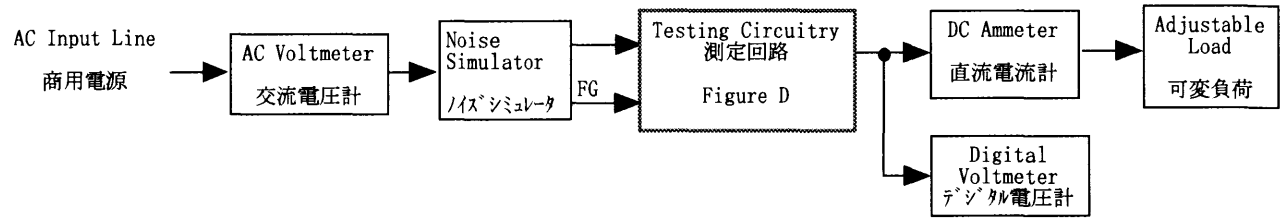

Figure C

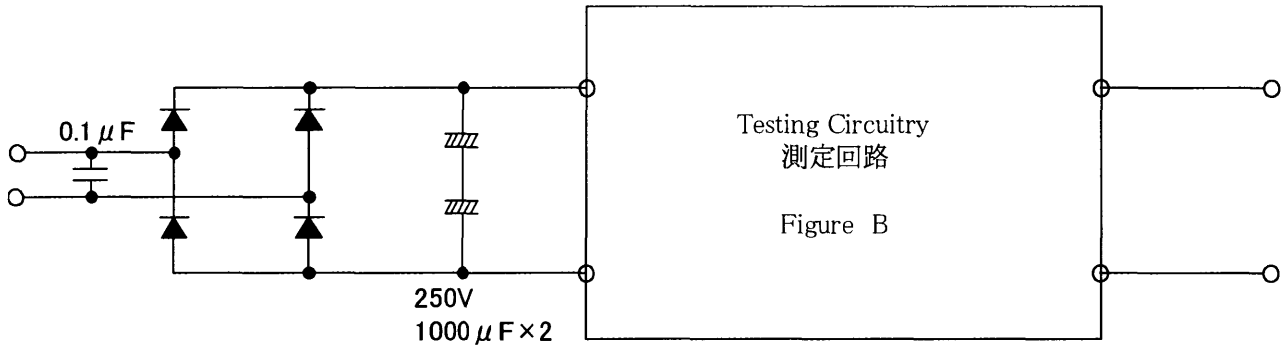

Figure D (Line Noise Tolerance)
入力雑音耐量